

In the claims: The claims are as follows.

1. (Previously presented) A digital communication system comprising: a symbol generator and a modulator, the symbol generator for translating a bit stream into a symbol stream based on a predetermined signal constellation, each symbol in the symbol stream for representing a predetermined even number of consecutive bits in the bit stream, the modulator configured to use a predetermined modulation scheme to modulate a carrier signal with the symbol stream so as to provide a modulated carrier signal, wherein the signal constellation has a dimensionality that is at least four and is a multiple of two, and each symbol of the signal constellation corresponds to an ordered set of at least two sets of two or more numbers, and further wherein for each of the at least four-dimensional symbols, the modulator is configured to modulate the carrier signal using in turn each of the at least two corresponding sets of two or more numbers.

2. (Previously presented) The digital communication system of claim 1 wherein each symbol of the signal constellation is located in the signal constellation so as to be separated from any other symbol by at least a distance of $a^5 P^{1/2} / b$, where $a = 2^{1/4}$ and $b = (1 + 2^{1/2})^{1/2}$ and P is the power radiated in transmitting one symbol.

3. (Previously presented) A method by which a digital communication system (20) transmits a bit stream, comprising:

a symbol generator translating a bit stream into a symbol stream based on a predetermined signal constellation, wherein each symbol in the symbol stream representing a predetermined even number of consecutive bits in the bit stream, and

a modulator using a predetermined modulation scheme to modulate a carrier signal with the symbol stream so as to provide a modulated carrier signal,

wherein the signal constellation has a dimensionality that is at least four and is a multiple of two, and each symbol of the signal constellation corresponds to an ordered set of at least two sets of two or more numbers, and further wherein for each of the at least four-dimensional symbols, the modulator modulates the carrier signal using in turn each of the at least two corresponding sets of two or more numbers.

4. (Previously presented) The method of claim 3, wherein each symbol of the signal constellation is located in the signal constellation so as to be separated from any other symbol by at least a distance of $a^5 P^{1/2} / b$, where $a = 2^{1/4}$ and $b = (1 + 2^{1/2})^{1/2}$ and P is the power radiated in transmitting one symbol.